

Translation

PATENT COOPERATION TREATY

PCT/FR2003/003516



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference IU 02-03	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/003516	International filing date (day/month/year) 27 novembre 2003 (27.11.2003)	Priority date (day/month/year) 27 novembre 2002 (27.11.2002)
International Patent Classification (IPC) or national classification and IPC C22C 38/12, 38/14, 38/38, C21D 8/06		
Applicant MITTAL STEEL GANDRANGE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of <u>5</u> sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 17 juin 2004 (17.06.2004)	Date of completion of this report 25 January 2005 (25.01.2005)
Name and mailing address of the IPEA/EP  Facsimile No.	Authorized officer  Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/003516

## I. Basis of the report

### 1. With regard to the **elements** of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages 1, 2, 5-9, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages 3-4, filed with the letter of 19 December 2004 (19.12.2004)
- ☒ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages 1-8, filed with the letter of 19 December 2004 (19.12.2004)
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
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## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

The new range of 0.15 to 0.35 wt % of Mo based on the weight of the iron, as introduced with the letter of 19 December 2004, causes the subject matter of the application to be extended beyond the content of the application as filed. The reason for this is that the application as filed does not mention or suggest selecting a minimum Mo percentage of 0.15 %. Therefore, this amendment, which has been made in claims 1, 7 and 8 and on pages 3 and 4 of the description, is contrary to the provisions of PCT Article 34(2)(b).

As a result, Box V below has been drafted as if said amendment had not been made.

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims		YES
	Claims	1-8	NO
Inventive step (IS)	Claims		YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

## 2. Citations and explanations

## 1. Reference is made to the following documents:

D1: US 5 554 233 A

D2: US 6 228 183 B

The present application fails to comply with the requirements of PCT Article 33(1) since the subject matter of independent claims 1, 7 and 8 does not meet the requirements of novelty and inventive step defined in PCT Article 33(2) and (3). The present application also fails to comply with the requirements of PCT Article 6 because the claims are unclear.

2. The steel composition set forth in claims 1, 7 and 8 has not been clearly defined (PCT Article 6). Indeed, with the wording "the composition ... is consistent with at least the following breakdown", said claims do not rule out the presence of possible further elements in undetermined amounts, which further elements might have an unforeseeable effect on the properties of the steel and particularly on the bainitic conversion conditions, and thus on the solution to the problem addressed by invention.

3. Claim 1 of the present application relates to a mechanical part made of low carbon steel and defined in terms of the way it is produced, its structure, its tensile strength and its steel composition. The mechanical part claimed does not differ from the parts known from document D1, for the following reasons.

Document D1 describes low carbon steel parts having strong mechanical properties, e.g. bolts or screws having a bainitic microstructure and a tensile strength of 827 MPa (column 1, lines 10-20; column 8, lines 9-12). The parts are obtained by the cold plastic conversion of bars hot-rolled in the austenitic range, said hot rolling being followed by cooling to impart a bainitic structure to the final part. The aim of D1, like that of the present application, is to provide parts that require no heat treatment after the cold plastic deformation step.

D1 thus describes the preparation method, structure and tensile strength specified in claim 1 of the application.

D1 also describes the steel composition claimed. Indeed, the composition disclosed in D1 (see claim 1) comprises 0.01 to 0.1 wt % of molybdenum. This maximum value of 0.1 % Mo is no different from the minimum value ( $> 0.1$  % Mo) claimed because the latter is defined not on the basis of 100 % of the steel composition but only in relation to the iron. As a result, the maximum value of Mo given in D1 and considered on the basis of the iron alone is higher

than 0.1 %. For the other elements, namely C, Nb, B, etc., the ranges claimed are no different from those disclosed in D1.

It follows that the subject matter of claim 1 is not novel.

- 3.1 For the same reasons (see also D1, column 2, line 58 to column 3, line 16; column 6, lines 60-62), the production method according to claim 7 and the industrial product according to claim 8 are not novel.
- 3.2 The features in dependent claims 2 to 6 are described in D1.
- 3.3 With the molybdenum contents claimed, e.g. 0.2 to 0.35 %, which are higher than the ones described in D1, the present application (see, in particular, page 6, lines 6-14) does not make it possible to determine what effects or advantages are achieved or what problem is solved by means of this difference (see D1, column 4, lines 10-20).

For this reason, the subject matter of claims 1 to 8 does not appear to involve an inventive step in the light of D1.

4. Document D2 describes the production of low carbon steel pipelines having strong mechanical properties, a bainitic microstructure and a tensile strength of at least 900 MPa (column 1, lines 9-16; column 4, lines 35-38; column 5, lines 53-63). These parts are obtained by the plastic conversion of plates hot-rolled in the austenitic range, said hot rolling

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being followed by cooling to impart a bainitic structure to the final part (column 3, lines 31-40; column 14, lines 13-19). D2, like the present application, makes it possible to provide parts that require no heat treatment after the bainitic conversion step.

The steel composition described in D2 (column 4, line 54 to column 5, line 25) is generally the same as the composition of the present claim 1. In particular, for the reasons given in paragraph 2 above, the present claim 1 does not rule out the presence of vanadium, which is present in the steel described in D2.

Since D2 discloses the production method, structure, tensile strength and composition specified in claim 1 of the application, the subject matter of claims 1, 7 and 8 also lacks novelty over document D2.

The features in dependent claims 2 to 6 are described in or obvious from D2.